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Volume 26 | Issue 2

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1963

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### Recommended Citation

Greve, J. H.; Myers, V. S. Jr.; and Sloss, M. W. (1963) "Chorioptic Dermatitis in A Horse," *Iowa State University Veterinarian*: Vol. 26 : Iss. 2 , Article 3.

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# Chorioptic Dermatitis in A Horse

J. H. Greve, D.V.M., Ph.D., V. S. Myers, jr., V.M.D., M.S., & M. W. Sloss, D.V.M., M.S.\*

*Chorioptes bovis* (Hering, 1845) is a recognized cause of dermatitis in cattle, horses, sheep, and goats. *C. bovis* is transmissible between any of these hosts, but cattle are thought to be the most common disseminators (7). The mites behave in a similar manner on all these hosts. Classically, the lesions first occur on the posterior fetlocks and pasterns, spreading to many other parts of the body by extension (5, 6).

Cutaneous lesions consist of scurfiness, papules that ooze serum, and scab formation. The skin becomes thickened and wrinkled, and secondary infection may enter the area (3, 5). The lesions are "only mildly pruriginous and occasionally depilatory" (6). Lapage (2) stated that the pruritic lesions cause horses to rub, scratch, and bite the affected leg, leading to secondary damage. As summer approaches, the lesions and mite populations regress, often returning the following winter (5, 8).

Because chorioptic dermatitis of the horse is rare (at least unrecognized) in Iowa, a case is presented here for its general interest.

## Case report

On October 5, 1963, a two-year-old Belgian stallion was examined for a lameness in the right rear leg. The stallion had hyperpnea (40 respirations/min.), increased pulse rate (68/min.), and pyrexia (102.6 F.). The horse lay down frequently due to weakness in the posterior limbs. Culture of venous blood yielded streptococci. The horse was given daily antibiotic and supportive therapy. The specific cause of the lameness was not ascertained.

At the time of the initial examination, mild skin lesions were noted on the left metatarsal area. During the course of the septicemia, these lesions worsened. They were characterized at this time by thickened skin, crusting, and scaling of the epidermis extending from the left hock to the fetlock (Figures 1 and 2). The hair in this area pulled out easily. No scratching was noticed. Similar lesions were not visible in other areas of the body. Hair and scurf from the affected leg were submitted for laboratory examination, which disclosed numerous chorioptic mites in all stages of development. Proper regulatory officials were notified of the presence of chorioptic dermatitis on the affected farm, which was quarantined.

\* Drs. Greve and Sloss are members of the Department of Pathology and Parasitology. Dr. Myers is a member of the Department of Medicine and Surgery.

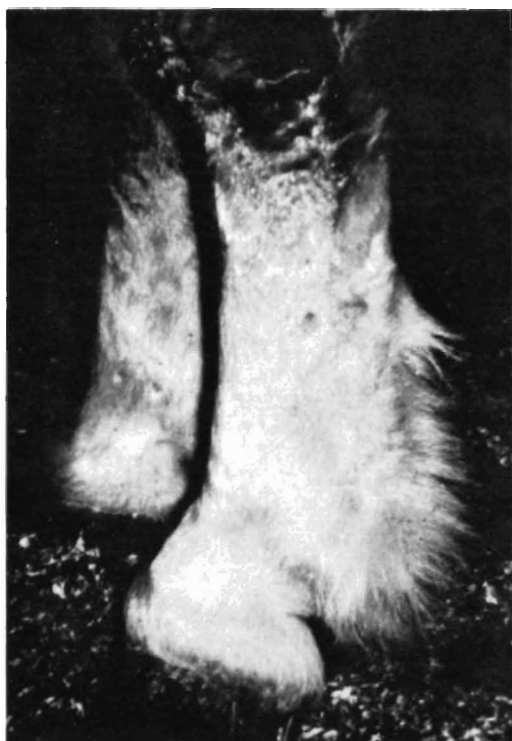


Figure 1. View of stallion's left rear leg, showing area affected by *Chorioptes bovis*.

Both hind legs of the affected stallion were washed thoroughly from the hocks downward with a suspension of 0.05% lindane. Subsequently, this stallion and other livestock on the farm (dairy cattle and horses) were treated with toxaphene. The cattle were sprayed once with a suspension of 0.5% toxaphene. The horses were soaked twice, 14 days apart, with a similar preparation, using a mop-like applicator. None of the animals were seen to have any adverse effects from the treatment.\* At inspection 12 weeks after treatment, the dermatitis appeared to be arrested.

#### Discussion

The source of infestation for the stallion is unknown. However, the horses and dairy cattle had opportunity for contact, and cattle are considered to be the common disseminators of *C. bovis* (7). No mites could be found in scrapings of small depilated lesions on the escutcheons

and thighs of several cows. The herdsman stated that similar lesions had occurred sporadically in the cattle herd for some time. It can be theorized that the cattle served as the source of infestation for the horses, the mite populations of the cattle being too small for detection. It is this "benign" characteristic that is responsible for the term "symbiotic mange" for this infestation.

The poor condition of the stallion appeared to accelerate the chorioptic dermatitis. Small lesions present at the time of initial examination did not attract special attention. It was thought that they were accidental abrasions, urine "scalds", or pressure sores due to recumbency. It is interesting to note that the original description of chorioptic dermatitis occurred in an emaciated heifer with "chronic affliction of the lymphatic system" (1). The mites were numerous in the skin of this heifer. Debilitating disease apparently can alter the host-parasite relationship in favor of the chorioptic mites.

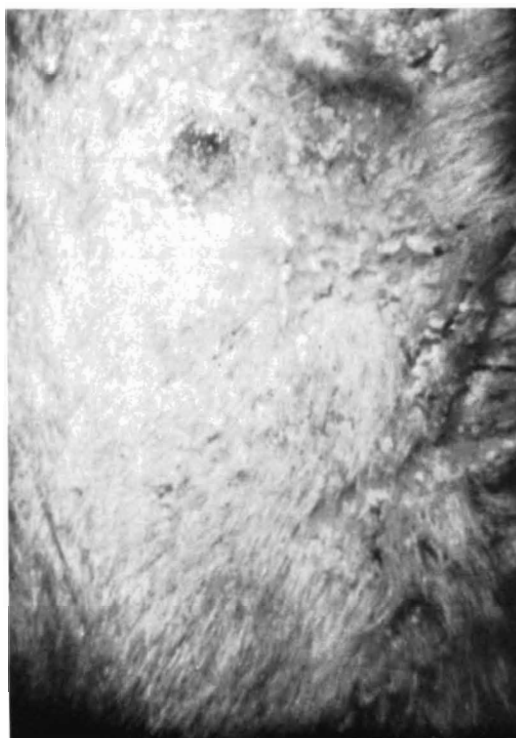


Figure 2. Close-up view of affected leg, showing depilation and scurfiness.

\* E. E. Linn, D.V.M., Iowa State Department of Agriculture, personal communication, December, 1963.

Treatment of chorioptic dermatitis often results in arrest rather than cure (5). Although the lesions and mite populations regress for the current season, they may return the next year. It has been postulated that the treatment does not eradicate the mites from an animal, but merely controls the population. However, the possibility of reinfestation is also present.

The exact cause of the lesion in chorioptic dermatitis is unknown. Because the mites feed superficially on epidermal debris, the feeding process (cheliceral rasping) is not thought to be the sole factor (6). This is further substantiated by the observation that areas with lesions often harbor no more mites than nearby areas without lesions. Hypersensitivity to the mites and their metabolites has been suggested as a possible factor (5).

The estival reduction in population also remains unanswered. Following *in vitro* studies on colonies of *C. bovis*, it was theorized that extrinsic factors, probably a temperature-humidity interplay, are significant in the reduction of *C. bovis* populations (8). High relative humidity

prevented hatching of the eggs. Other factors, including hair shedding, normal desquamation, rubbing, and licking, apparently play no significant role in the reduction of the mite population. Populations of sheep lice (*Damalinia ovis* (L.)) also are reduced by interplay of temperature and humidity (4). Environmental conditions present in the summer may be responsible for the reduction of ectoparasite populations.

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## Dates To Remember

### Continuing Education Course

A two-day concentrated course entitled *Physical Diagnosis and Internal Medicine—Bovine* will be offered on June 1 and 2, 1964 at Stange Memorial Clinic at Iowa State University.

Dr. Richard F. Bristol, Department of Surgery and Medicine will conduct the course with the assistance of members of the Department of Veterinary Hygiene and Veterinary Pathology.

The course will include detailed studies of: 1.) general physical examination; 2.) systemic examinations; 3.) bacteriological procedures; 4.) clinical pathology, and 5.) necropsy techniques of the bovine.

Enrollment will be limited to ten (10) to insure active participation in all techniques and procedures.

The complete registration will be \$75.00. Twenty-five (\$25.00) of that fee must be paid at least 30 days in advance.

Checks for advance registration should be made payable to Iowa State University and sent to Dr. Vaughn A. Seaton, Veterinary Diagnostic Laboratory, Iowa State University.

### Iowa Board Examination

The Iowa Veterinary Medical Examining Board has scheduled Iowa State Board Examinations on June 1 and 2, 1964. Examinations will be given in the House Chamber, State Capitol Building, Des Moines, Iowa beginning at 8 a.m.

Applicants are asked to report to the office of the Division of Animal Industry, Room 100 in the State Capitol, Des Moines, Iowa not later than 8 a.m. on Monday, June 1.

If you need additional information, or if you wish a supply of application blanks, please feel free to contact M. E. Pomeroy, D.V.M., Chief Division of Animal Industry.